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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,333	08/31/2006	Steven Porter Hotelling	PU040287	9243
24498	7590	05/13/2009		
Thomson Licensing LLC P.O. Box 5312 Two Independence Way PRINCETON, NJ 08543-5312			EXAMINER CHAPMAN JR, JOHN E	
			ART UNIT 2856	PAPER NUMBER
			MAIL DATE 05/13/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,333

Applicant(s)

HOTELLING ET AL.

Examiner

John E. Chapman

Art Unit

2856

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-14 and 16-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-14 and 16-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI-108)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 13, 2009 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1, 3, 4, 6, 7, 12, 14, 16, 17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters (4,512,192) in view of Merhav (4,590,801) and Zabler et al. (5,703,293).

Peters discloses a vibratory rotational rate sensor comprising a pair of vibratory masses (20a, 20b), a driver (28) for inducing periodic counter-phase motion in the vibratory masses along a common axis (X), a first sense circuit (12) coupled to a first vibratory mass (20a) for sensing motion in one direction (Y) orthogonal to the vibratory axis, and a second sense circuit (10) coupled to a second vibratory mass (20b) for sensing motion in another direction (Z) orthogonal to the vibratory axis. While Peters describes pick-off coil (32) as a drive coil (col. 3, lines 50-51), Peters refers to Merhav (Ser. No. 357,715 and Ser. No. 528,776) for a description of this general arrangement for vibrating the pair of accelerometers (col. 3, lines 39-41). As evidenced by Merhav (a continuation of Ser. No. 528,776), only one coil is used for driving the

pair of vibratory masses, the other being used only for sensing motion. See Figs. 8 and 9 of Merhav. Consequently, Peters anticipated a driver (28), coupled to only one vibratory mass (10) for inducing periodic motion in the pair of masses. Accordingly, the only difference between the claimed invention and the prior art consists in coupling a second sense circuit (10) to the first vibratory mass (20a) for sensing motion in another direction (Z) orthogonal to the vibratory axis (X). Zabler discloses a vibratory rotational rate sensor in Fig. 4 comprising a pair of vibratory masses (22) wherein a first sense circuit (25) and a second sense circuit (26) is coupled to each of the vibratory masses in order to compensate for transverse acceleration of sensors (25) or sensors (26). Accordingly, it would have been obvious to one of ordinary skill in the art to provide a first sense circuit (12) and a second sense circuit (10) on each of the vibratory masses (20a, 20b) of Peters in order to compensate for transverse acceleration.

Regarding claims 3 and 16, Peters discloses electromagnetic elements (28, 32) for driving the vibratory masses. The only further difference between the claimed invention and the prior art consists in providing electromagnetic elements for sensing the acceleration of the vibratory elements. Electromagnetic accelerometers are well known in the art, and merely to use an electromagnetic accelerometer for the accelerometer (10, 12) of Peters would have been obvious to one of ordinary skill in the art for the purpose of measuring Coriolis force.

Regarding claim 4 and 17, the driver (28) of Peters is coupled to the vibratory mass (20b), while it would have been obvious to provide a first sense circuit (12) and a second sense circuit (10) on the vibratory mass (20a).

Regarding claims 6 and 19, one direction (Y) is orthogonal to the other direction (Z).

Regarding claims 7 and 20, the only further difference between the claimed invention and the prior art consists in sensing motion of the vibratory masses (10, 12) along the vibratory axis and using the sensed motion to drive the vibratory masses, i.e., in providing a closed loop feedback control for the vibratory masses, which feature is well known in the art.

Regarding claim 12, the tuning fork (20) vibrates at resonance (column 3, lines 64-67). It is well known in the art and would have been obvious to provide the accelerometers (10, 12) with the same resonant frequency as the natural frequency of the tuning fork (20) in order to magnify the sense mode motion.

4. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Merhav and Zabler as applied to claims 1 and 14 above, and further in view of Varnham et al. (5,226,321).

Regarding claims 5 and 18, the only further difference between the claimed invention and the prior art consists in intermittently driving and sensing motion of a vibratory mass. Varnham teaches driving in bursts and monitoring in the periods between drive bursts in order to avoid crosstalk problems between primary axes excitation and secondary axes detection. It would have been obvious to one of ordinary skill in the art to intermittently drive and sense motion of the vibratory mass of Peters in order to avoid crosstalk problems between primary axes excitation and secondary axes detection.

5. Claims 8-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters in view of Merhav and Zabler as applied to claims 1 and 14 above, and further in view Lutz (5,604,312).

Regarding claim 8, Peters discloses a planar restoring element (20) comprising a resilient first member (20a) coupled to one mass (12) and a resilient second member (20b) coupled to the other mass (10). The only further difference between the claimed invention and the prior art consist in providing a plurality of members (20a, 20b) coupled to the masses. Lutz discloses a vibratory rotational rate sensor comprising a planar restoring element (13) having resilient members connected to each of the masses (1). Merely to provide a plurality of members (20a, 20b) for the purpose of supporting the masses (10, 12) would have been obvious for the purpose of improved stability of the vibrating masses.

Regarding claim 9, the restoring element (13) of Lutz is homogeneous.

Regarding claim 10, the length of the restoring element (13) of Lutz is greater than the distance between the ends.

Regarding claim 11, Lutz provides resilient mounting members (14) for the restoring element (13) in order to assist anti-phase oscillation.

Regarding claim 13, the planar restoring element (13) of Lutz is radially 3-fold symmetric, namely, radially symmetric about the X, Y and Z axes.

6. Applicant's arguments filed March 13, 2009 have been considered but are moot in view of the new ground(s) of rejection.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E. Chapman whose telephone number is (571) 272-2191. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John E Chapman/
Primary Examiner
Art Unit 2856